PATENT

Application # 10/667,060

Attorney Docket # 2002P15893US01 (1009-175)

# AMENDMENTS

## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method ~~of reassigning resources in a soft programmable logic controller (PLC), the method~~ comprising ~~the steps of~~:
<u>reassigning resources in a soft programmable logic controller (PLC), said reassigning comprising the steps of:</u>

selecting an interface in a first operating environment;

selecting a virtual slot in a second operating environment for installation of the interface;

creating an installation file in the first operating environment for installation of the interface in the second operating environment; and

installing the interface in the second operating environment using the installation file to reassign a resource between the first operating environment and the second operating environment.

2. (Currently Amended) The method of claim 1, wherein the first operating environment is ~~essentially~~ a non-real-time operating environment and the second operating environment is ~~essentially~~ a real<u>-</u>time operating environment.

3. (Currently Amended) The method of claim 1, wherein the second operating environment is ~~essentially~~ a non-real time operating environment and the first operating environment is ~~essentially~~ a ~~real~~ <u>real-</u>time operating environment.

4. (Currently Amended) The method of claim 1, wherein the first operating environment is <u>a</u> ~~an essentially~~ non-deterministic operating environment wherein scan cycles are variable, and the second operating environment is <u>a</u> ~~an essentially~~ deterministic operating environment wherein scan cycles are non-variable.

5. (Original) The method of claim 1, wherein the installing step includes installing a real-time device driver.

6. (Currently Amended) The method of claim 1, wherein the installing step overrides ~~the~~ an installation of a device driver associated with the first operating environment ~~mode~~.

7. (Original) The method of claim 1, during the creating step, installation parameters are obtained from the first operating environment and used in the creation of the installation file.

8. (Original) The method of claim 1, further comprising deleting the installation file.

9. (Original) The method of claim 1, further comprising uninstalling the resource from a device driver associated with the first operating environment.

10. (Original) The method of claim 1, further comprising enabling interrupt sharing for the reassigned resource so that an interrupt may be used for more than one resource.

11. (Original) The method of claim 1, further comprising the steps of:
> displaying the resource for reassignment; and
> selecting an empty interface slot in the second operating environment to receive the resource, the resource being one of an interface, a card, a device and a port.

12. (Original) The method of claim 1, further comprising modifying installation parameters to specify an installation file for a real-time driver.

13. (Original) The method of claim 1, further comprising updating a registry associated with the second operating environment to reflect a reassignment of the resource.

14. (Currently Amended) A method ~~of automatically reassigning resources in a soft~~

~~programmable logic controller, the method~~ comprising ~~the steps of~~:

automatically reassigning resources in a soft programmable logic controller, said automatically reassigning comprising the steps of:

identifying a resource to be reassigned from a first processing mode to a second processing mode;

removing the resource from operation in the first processing mode;

creating an installation file containing information of at least one device driver;

assigning the resource for operation in the second ~~operating~~-processing mode by using installation parameters associated with the first ~~operating~~-processing mode; and

automatically installing the at least one device driver for the resource in the second processing mode using the information from the installation file so that any device in communication with the at least one device driver is functional.

15. (Currently Amended) The method of claim 14, wherein the removing step includes removing the resource from an ~~essentially~~-non-~~real~~-real-time processing mode and the assigning step reassigns ~~the~~-a card associated with the resource for operation in a ~~an~~ ~~essentially~~-real-time operating mode adapted to achieve real-time processing.

16. (Original) The method of claim 14, further comprising updating a registry associated with the second processing mode to reflect a reassignment of the resource.

17. (Original) The method of claim 14, wherein in the assigning step includes associating the assigned resource with a software component instance.

18. (Original) The method of claim 14, further comprising modifying installation parameters to specify the installation file.

19. (Original) The method of claim 14, further comprising displaying available resources for reassignment from the first processing mode to the second processing mode and selecting

one of the displayed available resources for reassignment.

20. (Original) The method of claim 19, including building a list of available drivers for the selected resource.

21. (Original) The method of claim 14, in any step, the resource being one of a card, a port, an interface, and a device.

22. (Currently Amended) A system ~~for reassigning resources in a soft programmable logic controller (PLC), the system~~ comprising:

    a means for selecting an interface in a first operating environment;

    a means for selecting a virtual slot in a second operating environment for installation of the interface;

    a means for creating an installation file in the first operating environment for installation of the interface in the second operating environment; and

    a means for installing the interface in the second operating environment using the installation file to reassign a resource between the first operating environment and the second operating environment, said system adapted to said resource in a soft programmable logic controller (PLC).

23. (Original) The system of claim 22, further comprising a means for reassigning the resource to a real-time operating environment.

24. (Original) The system of claim 22, further comprising a means for installing a real-time device driver.

25. (Original) The system of claim 24, wherein the means for installing a real-time device driver overrides an installation of a device driver associated with the first operating environment.

26. (Original) The system of claim 22, wherein installation parameters are obtained from the first operating environment and used in the creation of the installation file.

27. (Original) The system of claim 22, further comprising a means for deleting the installation file.

28. (Original) The system of claim 22, further comprising a means for uninstalling the resource from a current device driver associated with the first operating environment.

29. (Original) The system of claim 22, further comprising a means for enabling interrupt sharing for the resource so that more than one resource shares an interrupt.

30. (Original) The system of claim 22, further comprising a means for updating a registry associated with the second operating environment to reflect a reassignment of the resource.

31. (Original) The method of claim 22, wherein the resource includes one of a port, an interface, a device, and a card.

32. (Original) A computer program product comprising a computer usable medium having readable program code embodied in the medium, the computer program product includes:

> a first software component to select an interface in a first operating environment;

> a second software component to select a virtual slot in a second operating environment for installation of the interface;

> a third software component to create an installation file in the first operating environment for installation of the interface in the second operating environment; and

> a fourth software component to install the interface in the second operating environment using the installation file to reassign a resource between the first operating environment and the second operating environment.